

552, 357

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
14 October 2004 (14.10.2004)

PCT

(10) International Publication Number
WO 2004/087797 A1(51) International Patent Classification⁷: **C08J 9/00**,
A61L 27/56(21) International Application Number:
PCT/CA2004/000500

(22) International Filing Date: 2 April 2004 (02.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/459,635 3 April 2003 (03.04.2003) US(71) Applicant (for all designated States except US): **CORPORATION DE L'ECOLE POLYTECHNIQUE DE MONTREAL** [CA/CA]; Departement of Chemical Engineering, 2900 Edouard Montpetit, C.P. 6079, Succ. Centre-ville, Montreal, Quebec H3C 3A7 (CA).

(72) Inventors; and

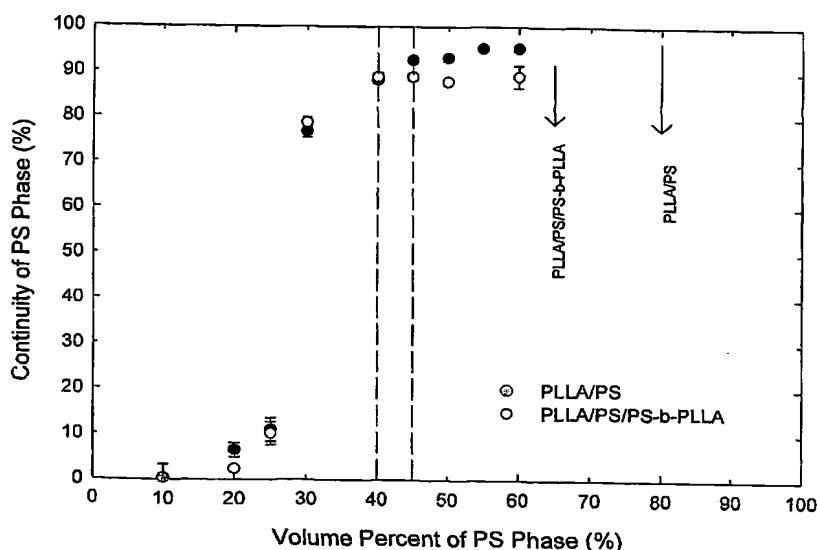
(75) Inventors/Applicants (for US only): **FAVIS, Basil, D.** [CA/CA]; 125, rue Meaney, Kirkland, Quebec H9J 3B9 (CA). **SARAZIN, Pierre** [CA/CA]; 6729, rue Louis-Hémond, Montreal, Quebec H2G 2L3 (CA). **LI, Jianming**[CA/CA]; 3901, Barclay, app.6, Montreal, Quebec H3S 1K6 (CA). **YUAN, Zhenhua** [CA/CA]; 2880, Place Darlington, app.1, Montreal, Quebec H3S 1L5 (CA).(74) Agents: **DUBUC, J.**, et al.; Goudreau Gage Dubuc, Stock Exchange Tower, 800 Place Victoria, Suite 3400, P.O. Box 242, Montreal, Quebec H4Z 1E9 (CA).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,

[Continued on next page]

(54) Title: MICROPOROUS ARTICLES COMPRISING BIODEGRADABLE MEDICAL POLYMERS, METHOD OF PREPARATION THEREOF AND METHOD OF USE THEREOF



(57) Abstract: The present invention relates to a highly controlled method of preparation of a microporous biodegradable polymeric article. Firstly, at least one biodegradable polymer A, one polymer B, biodegradable or not, partially or totally immiscible with A, and a compatibilizer C for A and B are selected. Secondly, the selected polymers are melt-blended, thereby preparing a polymer blend, wherein said polymers A and B have an essentially continuous morphology. Thirdly, after cooling, polymer B and compatibilizer C are selectively extracted from the polymer blend by dissolution in a solvent that is a non-solvent of polymer A. The resulting polymeric article has an essentially continuous porosity with a void volume between 10 and 90% and a unimodal diameter distribution set to a predefined unimodal peak location. It can be used in tissue engineering, for controlled release applications or as an implantable medical device.

WO 2004/087797 A1



GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*